

**Notice of Allowability**

Application No.

10/767,512

Examiner

Cam Y T. Truong

Applicant(s)

YOA ET AL.

Art Unit

2162

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/12/2007.
2. ☒ The allowed claim(s) is/are 1,4,5,9,16,22,25-28,30,31 and 33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Cam Y Truong  
Primary Examiner  
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**DETAILED ACTION**

1. Applicant has amended claims 1, 4, 5, 9, 16, 22, and canceled claims 2-3, 6-8, 10-15, 17-21, 23 and added claims 24-34 in the amendment filed on 2/12/2007.

Claims 1, 4, 5, 9, 16, 22 and 24-34 are pending in this Office Action.

**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with 3/7/2007 on Attorney Robert Chee.

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**In the specification:**

Please replace paragraph [0031] with amended paragraph [0031] as following:

[0031] Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, a CD-ROM, any other optical medium, a RAM, a PROM, and EPROM, a FLASH-EPROM, any other memory chip or cartridge, as described hereinafter. Common forms of transmission media includes, for example a carrier wave.

**In claims:** Please replace claims 1, 16, 22, 25-28, 30-31 and 33 with amended claims 1, 16, 22, 25-28, 30-31 and 33 and cancel claims 24, 29, 32, 34.

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1. (Currently amended) A computer implemented method of operation within a data processing system, the method comprising:

receiving a first request to execute a first function that returns data from two or more sources, wherein said two or more sources includes a first data source and a second data source;

in response to receiving said first request, performing the steps of:  
determining that said first data source is associated with said first request,  
in response to determining that said first data source is associated with said first request, executing a second function to obtain, from said first data source, first organization and data type information describing first data returned from said first data source,

after performing said first function against said first data source, returning first result data, wherein said first result data reflects said first organization and data type information; and wherein said first result data is in a same format as the first data as stored in the first data source, and

wherein in response to receiving said first request, further performing: registering query duration types based upon data types, wherein said query duration types are temporary data types that reflect data elements and collections of data elements to be fetched from a data source;

receiving a second request to execute said first function, wherein said second request is different from said first request; and in response to receiving said second request, performing the steps of:

determining that said second data source is associated with said second request, in response to determining that said second data source is associated with said second request, executing said second function to obtain, from said second data source, second organization and data type information describing second data returned from said second data source, and

after performing said first function against said second data source, returning second result data to a computer readable storage medium, wherein said second result data reflects said second organization and data type information; and

wherein said second result data is in a same format as the second data as stored in the second data source.

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16. (Currently amended) A system comprising:

a processing entity; and a memory coupled to the processing entity and storing program code which executed by the processing entity, causes the processing entity to: receive a first request to execute a first function included in the program code that returns data from two or more sources, wherein said two or more sources includes a first data source and a second data source;

in response to receiving said first request, performing the steps of: determining that said first data source is associated with said first request; in response to determining that said first data source is associated with said first request, execute a second function to obtain, from said first data source, first organization and data type information describing first data returned from said first data source;

after performing said first function against said first data source, return first result data, wherein said first result data reflects said first organization and data type information; and wherein said first result data is in a same format as the first data as stored in the first data source, wherein in response to receiving said first request, further performing: registering query duration types based upon data types, wherein said query duration types are temporary data types that reflect data elements and collections of data elements to be fetched from a data source;

receive a second request to execute said first function, wherein said second request is different from said first request; and in response to receiving said second request, performing the steps of:

determining that said second data source is associated with said second request, in response to determining that said second data source is associated with said second request, execute said second function to obtain, from said second data source, second organization and data type information describing second data returned from said second data source, and

after performing said first function against said second data source, return second result data to a computer readable storage medium, wherein said second result data reflects said second organization and data type information; and

wherein said second result data is in a same format as the second data as stored in the second data source.

22. (Currently amended) A computer-readable storage medium carrying one or more sequence of instructions which executed by one or more processors, causes the one or more processors to:

receive a first request to execute a first function that returns data from two or more sources, wherein said two or more sources includes a first data source and a second data source;

in response to receiving said first request, performing the steps of:  
determining that said first data source is associated with said first request,  
in response to determining that said first data source is associated with said first request, executing a second function to obtain, from said first data source, first

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organization and data type information describing first data returned from said first data source,

after performing said first function against said first data source, returning first result data, wherein said first result data reflects said first organization and data type information; and wherein said first result data is in a same format as the first data as stored in the first data source, and

wherein in response to receiving said first request, further performing: registering query duration types based upon data types, wherein said query duration types are temporary data types that reflect data elements and collections of data elements to be fetched from a data source;

receive a second request to execute said first function, wherein said second request is different from said first request; and in response to receiving said second request, performing the steps of:

determining that said second data source is associated with said second request, in response to determining that said second data source is associated with said second request, executing said second function to obtain, from said second data source, second organization and data type information describing second data returned from said second data source, and

after performing said first function against said second data source, returning second result data to a computer readable storage medium, wherein said second result data reflects said second organization and data type information; and



wherein said second result data is in a same format as the second data as stored in the second data source.

25. (Currently amended) The method of claim 1 wherein query duration types are used to type-check the first function.

26. (Currently amended) The computer readable storage medium of claim 22 wherein determining that said first data source is associated with first request comprises determining whether a certain keyword is specified as a data return type for the first function.

27. (Currently amended) The computer readable storage medium of claim 22 wherein determining that said first data source is associated with first request comprises determining whether the first function returns data in an array of data elements.

28. (Currently amended) The computer readable storage medium of claim 22 wherein the organization and data type information indicates an arrangement of rows and columns of a database table and wherein organizing result data according to the organization and data type information comprises tabulating result data according to arrangement of rows and columns.

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30. (Currently amended) The computer readable storage medium of claim 22 wherein query duration types are used to type-check the first function.

31. (Currently amended) A computer implemented method of operation within a data processing system, the method comprising:

- receiving a request to execute a first function that returns a data structure capable of storing any data type, wherein the data structure contains data from a data source;

- executing a second function that generates and returns a list of data types to be returned by the first function, wherein the list of data types is received from the data source indicated by the first function;

- registering query duration types based upon the list of data types;

- generating output buffers according to the query duration types;

- completing query processing using the query duration types, wherein the completing query processing further comprises type-checking the first function using the query duration types;

- executing the first function to obtain a collection of data in the data structure;

- extracting the collection of data in the data structure;

- sending the extracted collection of data in the data structure to the output buffers; and returning the collection of data in the output buffers according to the query duration types.

33. (Currently amended) A computer-readable storage medium carrying one or more sequences of instructions which executed by one or more processors, causes the one or more processors to:

receive a request to execute a first function included in the one or more sequences of instructions that returns a data structure capable of storing any data type, wherein the data structure contains data from a data source;

execute a second function included in the one or more sequences of instructions that generates and returns a list of data types to be returned by the first function;

wherein the list of data types is received from the data source indicated by the first function;

register query duration types based upon the list of data types;

generate output buffers according to the query duration types;

execute the first function to obtain a collection of data formatted according to a first type of data structure;

complete query processing using the query duration types, wherein the completing query processing further comprises type-checking the first function using the query duration types;

extract the collection of data in the data structure;

send the extracted collection of data in the data structure to the output buffers;

and return the collection of data in the output buffers according to the query duration types.

***Allowable Subject Matter***

3. Claims 1, 4, 5, 9, 16, 22 and 25-28, 30-31, 33 are allowed.

The prior art of record, alone or in combination, does not teach or fairly suggest the combination of steps as recited in independent claim 1 (a method), claim 16 (a system) and claim 22 (a computer readable storage medium), wherein

in response to receiving said first request, performing the steps of:  
determining that said first data source is associated with said first request,  
in response to determining that said first data source is associated with said first request, executing a second function to obtain, from said first data source, first organization and data type information describing first data returned from said first source, wherein in response to receiving said first request, further performing:  
registering query duration types based upon data types, wherein said query duration types are temporary data types that reflect data elements and collections of data elements to be fetched from a data source after performing said first function against said first data source, returning first result data, wherein said first result data reflects said first organization and data type information; and wherein said first result data is in a same format as the first data as stored in the first data source, and

The prior art of record, alone or in combination, does not teach or fairly suggest the combination of steps as recited in independent claim 31 (A method) and claim 33 (A computer readable storage medium), wherein executing a second function that generates and returns a list of data types to be returned by the first function, wherein the list of data types is received from the data source indicated by the first function; registering query duration types based upon the list of data types; generating output buffers according to the query duration types; completing query processing using the query duration types, wherein the completing query processing further comprises type-checking the first function using the query duration types.


The dependent claims, bring definite, further limiting, and fully enabled by the specification are also allowed.

**Contact Information**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T. Truong whose telephone number is (571) 272-4042. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Cam Y Truong  
Primary Examiner  
Art Unit 2162  
3/9/2007